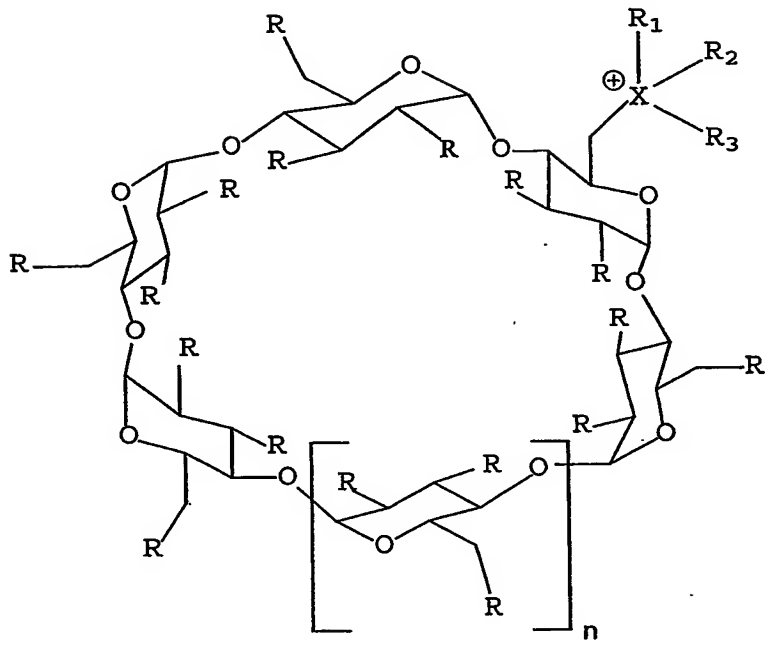
Claims:

1. A cationic oligomer of a saccharide of the general formula (I)



(I)

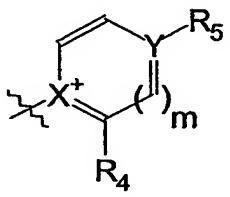
wherein n = 0 to 8;

X is nitrogen or phosphorous;

R is a hydroxyl, an ester, a carbamate, a carbonate, a phosphinate, a phosphonate, a phosphate, a sulfinate, a sulfite, a sulfonate, a sulphate, or R'O-, wherein R' is linear or branched (C_1-C_{20})alkyl, hydroxy(C_1-C_{20})alkyl, carboxy(C_1-C_{20})alkyl, aryl, or aryl(C_1-C_{20})alkyl; and

R_1, R_2 and R_3 are each independently selected from the group consisting of hydrogen, linear or branched (C_1-C_{20})alkyl, linear or branched (C_1-C_{20})alkenyl, linear or branched (C_1-C_{20})alkynyl, and cycloalkyl; or

R_1 is absent, and R_2 and R_3 are taken together with X to form a ring having the following structure:



wherein m = 0 or 1;

Y is carbon or nitrogen;

R_4 is hydrogen, linear or branched (C_1-C_{20})alkyl, linear or branched (C_1-C_{20})alkenyl, linear or branched (C_1-C_{20})alkynyl, or cycloalkyl; and

R_5 is hydrogen, 2-(2-ethoxyethoxy)ethyl, linear or branched (C_1-C_{20})alkyl, linear or branched (C_1-C_{20})alkenyl, linear or branched (C_1-C_{20})alkynyl, cycloalkyl, or NR_6R_7, wherein R_6 and R_7 are each independently selected from the group consisting of hydrogen, linear or branched (C_1-C_{20})alkyl, linear or branched (C_1-C_{20})alkenyl, linear or branched (C_1-C_{20})alkynyl, and cycloalkyl.

2. The cationic oligomer of a saccharide according to claim 1, wherein R_1, R_2 and R_3 are each independently selected from the group consisting of hydrogen, linear or branched (C_1-C_{20})alkyl, linear or branched (C_1-C_{20})alkenyl, linear or branched (C_1-C_{20})alkynyl, and cycloalkyl.

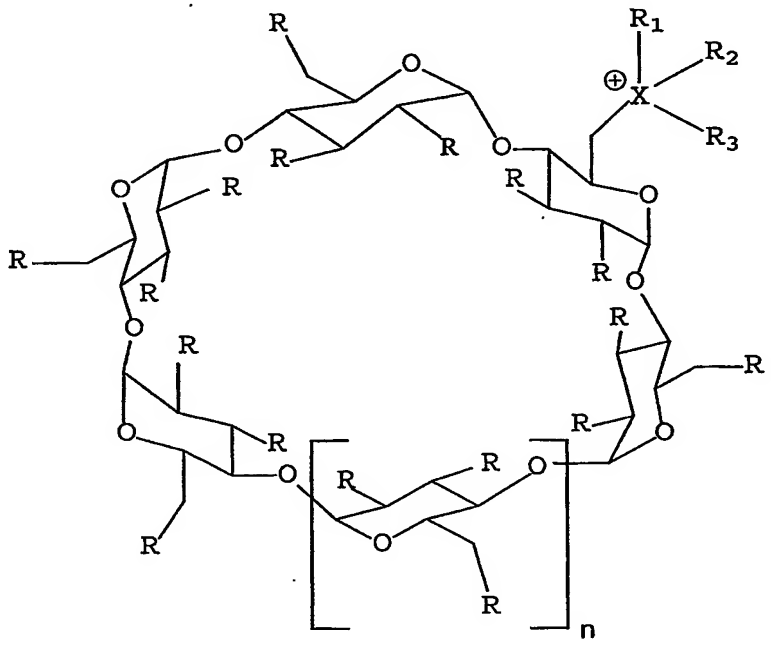
3. The cationic oligomer of a saccharide according to claim 2, wherein X is nitrogen.

4. The cationic oligomer of a saccharide according to claim 2, wherein X is phosphorous.

5. The cationic oligomer of a saccharide according to claim 1, wherein R_1 is absent, R_2 and R_3 form a ring, X is nitrogen, Y is nitrogen, and m is 0.

6. The cationic oligomer of a saccharide according to claim 1, wherein R_1 is absent, R_2 and R_3 form a ring, X is nitrogen, Y is carbon, and m is 1.

7. A cationic oligomer of a saccharide of the general formula (I)



(I)

wherein n = 0 to 8;

X is nitrogen or phosphorous;

R is a hydroxyl, an ester, a carbamate, a carbonate, a phosphinate, a phosphonate, a phosphate, a sulfinate, a sulfite, a sulfonate, a sulphate, or R'O-, wherein R' is

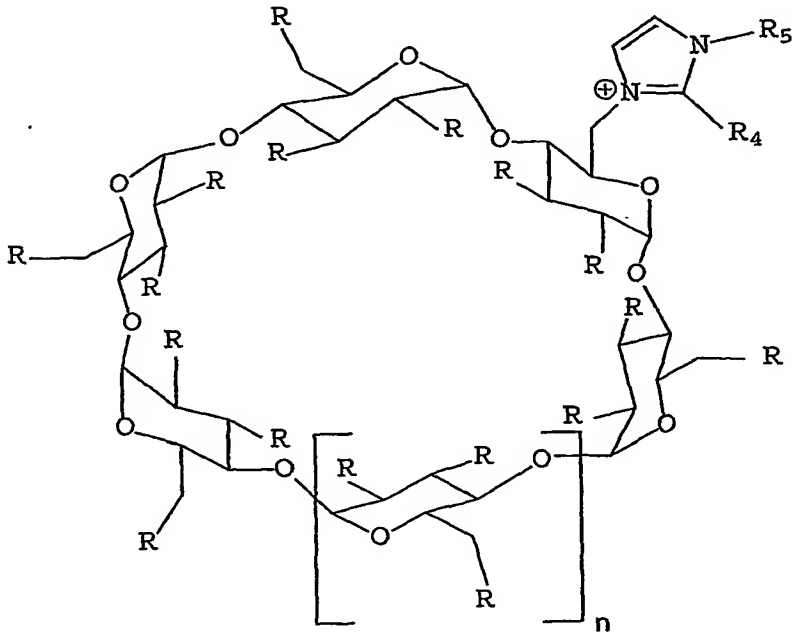
linear or branched (C_1-C_{20})alkyl, hydroxy(C_1-C_{20})alkyl, carboxy(C_1-C_{20})alkyl, aryl, or aryl(C_1-C_{20})alkyl; and

R_1, R_2 and R_3 are each independently selected from the group consisting of hydrogen, linear or branched (C_1-C_{20})alkyl, linear or branched (C_1-C_{20})alkenyl, linear or branched (C_1-C_{20})alkynyl, and cycloalkyl.

8. The cationic oligomer of a saccharide according to claim 7, wherein X is nitrogen.

9. The cationic oligomer of a saccharide according to claim 7, wherein X is phosphorous.

10. A cationic oligomer of a saccharide of the general formula (II)



(II)

wherein n = 0 to 8;

R is a hydroxyl, an ester, a carbamate, a carbonate, a phosphinate, a phosphonate, a phosphate, a sulfinate, a sulfite, a sulfonate, a sulphate, or R'O-, wherein R' is

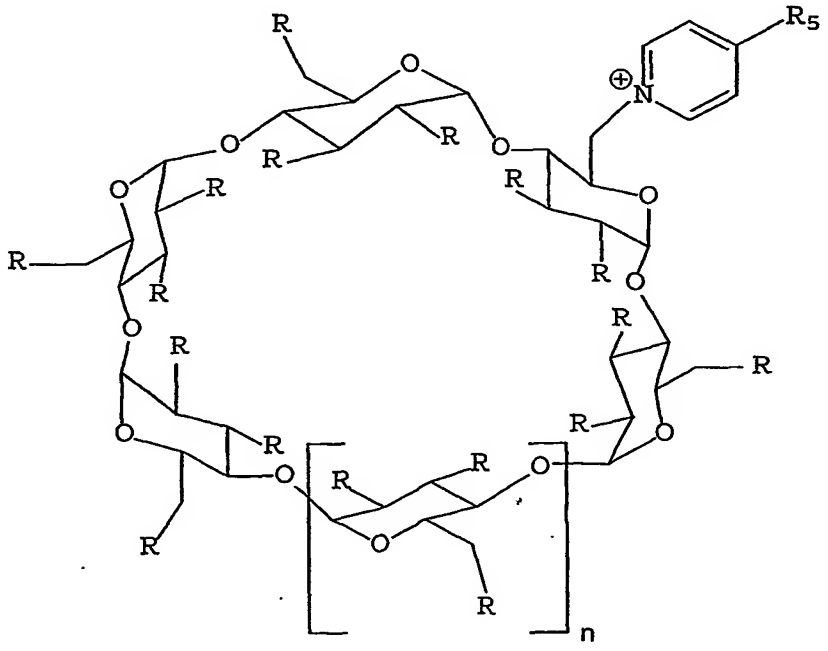
linear or branched chain (C_1-C_{20})alkyl, hydroxy(C_1-C_{20})alkyl, carboxy(C_1-C_{20})alkyl, aryl, or aryl(C_1-C_{20})alkyl;

R_4 is hydrogen, linear or branched (C_1-C_{20})alkyl, linear or branched (C_1-C_{20})alkenyl, linear or branched (C_1-C_{20})alkynyl, or cycloalkyl; and

R_5 is hydrogen, 2-(2-ethoxyethoxy)ethyl, linear or branched (C_1-C_{20})alkyl, linear or branched (C_1-C_{20})alkenyl, linear or branched (C_1-C_{20})alkynyl, or cycloalkyl.

11. The cationic oligomer of a saccharide according to claim 10, wherein R_4 is hydrogen or methyl.

12. A cationic oligomer of a saccharide of the general formula (III)



(III)

wherein n = 0 to 8;

R is a hydroxyl, an ester, a carbamate, a carbonate, a phosphinate, a phosphonate, a phosphate, a sulfinate, a

sulfite, a sulfonate, a sulphate, or R'O-, wherein R' is linear or branched (C_1-C_{20})alkyl, hydroxy(C_1-C_{20})alkyl, carboxy(C_1-C_{20})alkyl, aryl, or aryl(C_1-C_{20})alkyl; and

R_5 is hydrogen, linear or branched (C_1-C_{20})alkyl, linear or branched (C_1-C_{20})alkenyl, linear or branched (C_1-C_{20})alkynyl, cycloalkyl, or NR_6R_7, wherein R_6 and R_7 are each independently selected from the group consisting of hydrogen, linear or branched (C_1-C_{20})alkyl, linear or branched (C_1-C_{20})alkenyl, linear or branched (C_1-C_{20})alkynyl, and cycloalkyl.

13. The cationic oligomer of a saccharide according to any one of claims 1 to 12, wherein n is 1, 2, or 3.

14. The cationic oligomer of a saccharide according to any one of claims 1 to 13 further comprising a counterion.

15. The cationic oligomer of a saccharide according to claim 14, wherein the counterion is fluoride, chloride, bromide, iodide, nitrate, HCO_3^-, CO_3^{2-}, HSO_4^-, BF_4^-, BCl_4^-, PF_6^-, SbF_6^-, AsF_6^-, $AlCl_4^-$, R_9-CO_2^- or R_9-SO_3^-, wherein R_9 is linear or branched (C_1-C_{20})alkyl, linear or branched (C_1-C_{20})alkenyl, linear or branched (C_1-C_{20})alkynyl, cycloalkyl, or aryl(C_1-C_{20})alkyl.

16. A method of preparing a cationic oligomer of a saccharide as defined in any one of claims 1 to 15 comprising reacting an amine, a phosphine, an imidazole, or a pyridine with a oligomer of a saccharide having a leaving.

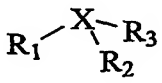
17. The method according to claim 16, wherein the leaving group is a halide, a mesylate, a tosylate, a triflate, or a haloformate ester group.

18. The method according to claim 17, wherein the halide is an iodide, bromide, or chloride.

19. The method according to any one of claims 16 to 18, wherein the leaving group is a tosylate.

20. The method according to any one of claims 16 to 19, wherein the oligomer of a saccharide is mono-6-deoxy-6-tosyl cyclodextrin or mono-2-deoxy-2-tosyl cyclodextrin.

21. The method according to any of claims 16 to 20, wherein the amine and phosphine are

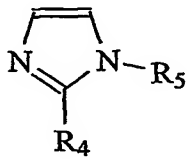


wherein X, R_1, R_2, and R_3 are defined as in claim 1.

22. The method of claim 21, wherein X is nitrogen.

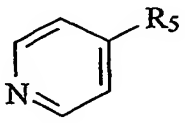
23. The method of claim 21, wherein X is phosphorous.

24. The method according to any one of claims 16 to 20, wherein the imidazole is



wherein R_4 and R_5 are defined as in claim 1.

25. The method according to any one of claims 16 to 20, wherein the pyridine is



wherein R_5 is defined as in claim 1.

26. Use of a cationic oligomer of a saccharide as defined in any of claims 1 to 15 as chiral agent for an enantiomeric separation by a chromatographic method.

27. The use of claim 26, wherein the chromatographic method is selected from the group consisting of gas chromatography (GC), liquid chromatography (LC), high performance liquid chromatography (HPLC), capillary electrophoresis (CE), and sub or supercritical fluid chromatography (SFC).

28. Use of a cationic oligomer of a saccharide as defined in any of claims 1 to 15 as a chiral agent for an asymmetric synthesis.

29. The use of claim 28, wherein the asymmetric synthesis is a reduction or a pericyclic reaction.

30. The use of claim 29, wherein the pericyclic reaction is an ene or a Diels Alder reaction.